Notice of Allowability	Application No.	Applicant(s)	
	10/813,774	CHAN ET AL.	
	Examiner	Art Unit	
	Andrew Wendell	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *1/29/2007*.

2. ☒ The allowed claim(s) is/are *1-12*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kevin Drucker on 4/13/2007.

The application has been amended as follows:

Regarding claim 10, line 2 of the claim, remove "processor" and replace with -- computer --.

Regarding claim 10, line 3 of the claim, remove "the" and replace with -- a --.

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance: Regarding claim 1, the prior art of record, Hashem et al. (US Pat# 6,748,222) system for providing load-balanced communication teaches monitoring for a message of a connection between a user element and a network Step S116 (Fig. 7); determining whether the message is a call set-up message S116 (Fig. 7) or an allocation message S118 and S120 (Fig. 7); allocating if the message is a call set-up message (Communication initialization, Col. 9 lines 56-63), one of the processors to the connection in accordance with a load balancing algorithm (Col. 2 lines 35-62 and Col. 5 line 62-Col. 7 line 6).

Agin (US Pat Pub# 2002/0119784) managing processing resources in a mobile radio system teaches if the message is an allocation message, a set of spreading codes to the connection with the same spreading factor (Section 0026 and 0190).

3rd Generation Partnership Project technical specification teaches determining whether the message is a call set-up message or an allocation message (pages 17-20). Note, this teaches that the base station will determine the call set-up message or based on the priority level of requested radio access bearer a decision on resource allocation.

The prior art of art fails to teach a method of allocating processing capacity of processors in a radio network controller, the method comprising the steps of monitoring for a message of a connection between a user element and a network; determining whether the message is a call set-up message from the user element or an allocation message from one of the processors; if the message is a call set-up message, then allocating one of the processors to the connection in accordance with a load balancing algorithm; and if the message is an allocation message, then allocating a set of spreading codes to the connection with the same spreading factor and sending the set of spreading codes to a call-processing application on the processor that sent the allocation message.

Applicant remarks made on 8/11/2006 further support examiner's reason for allowance.

The prior art of record fails to teach the claimed subject matter as claimed and substantially connected in claims 1-8 and 11.

Regarding claim 9, Hashem et al. (US Pat# 6,748,222) system for providing load-balanced communication teaches means for monitoring for a message of a connection between a user element and a network Step S116 (Fig. 7); means for determining whether the message is a call set-up message S116 (Fig. 7) or an allocation message S118 and S120 (Fig. 7); means for allocating if the message is a call set-up message (Communication initialization, Col. 9 lines 56-63), one of the processors to the connection in accordance with a load balancing algorithm (Col. 2 lines 35-62 and Col. 5 line 62-Col. 7 line 6).

Agin (US Pat Pub# 2002/0119784) managing processing resources in a mobile radio system teaches if the message is an allocation message, a set of spreading codes to the connection with the same spreading factor (Section 0026 and 0190).

3rd Generation Partnership Project technical specification teaches means for determining whether the message is a call set-up message or an allocation message (pages 17-20). Note, this teaches that the base station will determine the call set-up message or based on the priority level of requested radio access bearer a decision on resource allocation.

The prior art of art fails to teach a network comprising a radio network controller, the radio network controller comprising means for monitoring for a message of a connection between a user element and a network; means for determining whether the message is a call set-up message from the user element or an allocation message from one of the processors; means for allocating one of the processors to the connection in accordance with a load balancing algorithm, if the message is an allocation message;

and means for allocating a set of spreading codes to the connection with the same spreading factor and sending the set of spreading codes to a call-processing application on the processor that sent the allocation message, if the message is an allocation message.

Applicant remarks made on 8/11/2006 further support examiner's reason for allowance.

Regarding claim 10, the prior art of record, Hashem et al. (US Pat# 6,748,222) system for providing load-balanced communication teaches monitoring for a message of a connection between a user element and a network Step S116 (Fig. 7); determining whether the message is a call set-up message S116 (Fig. 7) or an allocation message S118 and S120 (Fig. 7); allocating if the message is a call set-up message (Communication initialization, Col. 9 lines 56-63), one of the processors to the connection in accordance with a load balancing algorithm (Col. 2 lines 35-62 and Col. 5 line 62-Col. 7 line 6).

Agin (US Pat Pub# 2002/0119784) managing processing resources in a mobile radio system teaches if the message is an allocation message, a set of spreading codes to the connection with the same spreading factor (Section 0026 and 0190).

3rd Generation Partnership Project technical specification teaches determining whether the message is a call set-up message or an allocation message (pages 17-20). Note, this teaches that the base station will determine the call set-up message or based on the priority level of requested radio access bearer a decision on resource allocation.

The prior art of art fails to teach a computer-readable medium haing stored thereon a plurality of instructions, the plurality of instructions including instructions which, when executed by a computer, cause a processor to implement a method for allocating processing capacity of processors in a radio network controller, the method comprising the steps of monitoring for a message of a connection between a user element and a network; determining whether the message is a call set-up message from the user element or an allocation message from one of the processors; if the message is a call set-up message, then allocating one of the processors to the connection in accordance with a load balancing algorithm; and if the message is an allocation message, then allocating a set of spreading codes to the connection with the same spreading factor and sending the set of spreading codes to a call-processing application on the processor that sent the allocation message.

Applicant remarks made on 8/11/2006 further support examiner's reason for allowance.

Regarding claim 12, the prior art of record, Lachtar et al. (US Pat Pub# 2003/0125039) teaches monitoring for a message of a connection between a user element and a network 802 (Fig. 8A and Section 0031); and allocating, if the message is a call set-up message, one of the processors to the connection in accordance with a load-balancing algorithm based on a call-context amount per CPU load-balancing algorithm (Sections 0031-0042) wherein the call-context amount per CPU load-balancing algorithm comprises determining an number of calls per processor 804 and 806 (Fig. 8A, Sections 0031, 0032 and 0041), weighting the number of calls per

processor by a total call capacity of the processor (Sections 0031, 0032 and 0041 and Sharma et al. reference); and selecting the processor with the smallest weighted call 850 (Fig. 8D, the highest NEC value means it has the most capacity and therefore it would have the smallest weighted call average).

Sharma et al. (US Pat# 6,069,871) teaches the details of the NEC (net excess capacity). The NEC covers the details of a call-context amount per CPU load-balancing (Col. 8 lines 9-59).

The prior art of record fails to teach a method of allocating processing capacity of processors in a radio network controller, the method comprising the steps of monitoring for a message of a connection between a user element and a network; and allocating, if the message is a call set-up message, one of the processors to the connection in accordance with a load-balancing algorithm based on a call-context amount per CPU load-balancing algorithm, wherein the call-context amount per CPU load-balancing algorithm comprises determining an average number of calls per processor, weighting the average number of calls per processor by a total call capacity of the processor; and selecting the processor with the smallest weighted call average.

Also, the applicant's remarks filed on 1/29/2007 further state the reasons for allowance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Choi discloses a method for calculating call processing capacity of mobile communication system using internet communication network. Aalto discloses a method and system for controlling a macrodiversity connection through at least two radio network controllers. Ho discloses a distributed signaling message routing in a scalable wireless communication system. Triolo discloses a method and system for dynamic automatic optimization of CDMA network parameters. Sharma discloses a method and system for load balancing in a wireless communication system. Eriksson discloses a system and method used in a mobile telecommunications network for load balancing ongoing calls between different base station controllers. Cyr discloses a load balancing and overload control in a distributed processing telecommunications system. Servi discloses a probabilistic use of wireless reserve channels for admission control. Dorenbosch discloses a method and apparatus for assigning a mobile station to a communication resource.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Wendell whose telephone number is 571-272-0557. The examiner can normally be reached on 7:30-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew Wendell
Examiner
Art Unit 2618

4/13/2007

NAY MAUNG
SUPERVISORY PATENT EXAMINER